
SOLANACEÆ OF OHIO.

AMY WILLIAMS.

In the following study, the genera and species have been arranged in what appears to the writer to be their phyletic sequence. Easy keys for identification and the distribution in the state, so far as shown by specimens in the state herbarium, should make a study of the family readily accessible to the amateur botanists of Ohio.

SOLANACEÆ. Potato Family.

Herbs, shrubs, vines, or some tropical species trees, with alternate or rarely opposite leaves without stipules, and with hypogenous, bisporangiate, regular or nearly regular cymose flowers. Calyx mostly 5-lobed; corolla sympetalous, mostly 5-lobed, the lobes induplicate-valvate or plicate in the bud; stamens united with the corolla, as many as it's lobes and alternate with them,

all equal and perfect in the following genera except *Petunia*. Gynecium of 2 united carpels, rarely 3 or 5; ovules and seeds numerous; fruit a berry or capsule.

Key to the Genera.

1. Corolla funnelform, fruit a capsule. 2.
1. Corolla campanulate to rotate, fruit a berry, sometimes nearly dry. 4.
2. Flowers in large terminal racemes or panicles, viscid-pubescent; calyx tubular-campanulate or ovoid. *Nicotiana*.
2. Flowers axillary or in simple, leafy racemes. 3.
3. Calyx tube $\frac{1}{4}$ inch long and with long, leaf-like lobes. *Petunia*.
3. Calyx tube an inch or more long. *Datura*.
4. Stems woody, often with thorns, leaves lanceolate, fruit a nearly dry berry. *Lycium*.
4. Stems herbaceous, or if woody then the leaves lobed or compound, and fruit a fleshy berry. 5.
5. Anthers unconnected, corolla broadly campanulate, fruiting calyx enlarged. 6.
5. Anthers connivent or slightly connate, corolla rotate, fruiting calyx not enlarged. 7.
6. Ovary 3-5-locular, fruiting calyx deeply 5-parted, corolla pale blue. *Physalodes*.
6. Ovary bi-locular, calyx 5-lobed, not parted, corolla yellow or whitish, often with a dark centre. *Physalis*.
7. Anthers opening by terminal pores or short slits, leaves entire, lobed or pinnately compound. *Solanum*.
7. Anthers longitudinally dehiscent, leaves usually bi-pinnatifid, or bi-pinnate. *Lycopersicon*.

Petunia Juss.

Viscid-pubescent herbs with entire leaves. Flowers white, violet, or purple, having funnelform corollas with plicate, spreading or slightly irregular limbs; stamens 5, united with the corolla, 4 of them didynamous, perfect, the fifth smaller or obsolete; filaments slender; ovary bilocular.

1. **Petunia violacea** Lindl. Common *Petunia*. Very viscid, from 8 to 25 inches high. Leaves ovate or obovate, all but the uppermost petioled, mostly obtuse; corolla commonly violet-purple with a campanulate tube, the limb plicate; sepals linear. Monroe, Franklin. Native of South America.

Nicotiana L.

Viscid-pubescent narcotic herbs or shrubs. Leaves entire or slightly undulate; flowers white, yellow, greenish or purplish; in terminal racemes or panicles; calyx tubular-campanulate or ovoid, 5-cleft; corolla-tube usually longer than the limb, 5-lobed, spreading; stamens 5, united with the corolla; ovary bilocular, rarely 4-locular; style slender; stigma capitate.

1. **Nicotiana tabacum** L. Common Tobacco. Large, showy herbs about 30 or more inches high. Leaves lance-ovate, decurrent, or the upper ones lanceolate; flowers rose-purple, in panicles with funnelform corolla, with somewhat inflated throat and short lobes. Huron, Adams. Escaped from cultivation.

Datura L.

Large narcotic herbs, or rarely shrubs or trees. Leaves petioled, alternate; flowers large, solitary, erect, short-peduncled and white, purple or violet; calyx elongated-tubular or prismatic, 5-cleft; corolla funnelform, 5-lobed, the lobes plicate, broad, acuminate; stamens included or little exerted, with long, filiform filaments, united with the corolla tube to about the middle.

1. Leaves entire, calyx tubular. *D. metel*.

1. Leaves lobed and angled, calyx prismatic, flowers white to purple.
D. stramonium.

1. **Datura metel** L. Entire-leaf Jimson-weed. Annual; finely glandular-pubescent, 3 to 9 feet high. Leaves broadly ovate, acute, inequilateral, rounded or subcordate at the base; flowers white, corolla about twice the length of the calyx; capsule nearly globose, obtuse, prickly and pubescent. Lake county. From tropical America.

2. **Datura stramonium** L. Common Jimson-weed. Annual, glabrous or the young parts minutely pubescent. Stem stout; leaves ovate, acute or acuminate, often with a tinge of purple, irregularly sinuate-lobed, the lobes acute; flowers white or violet; calyx prismatic; capsule ovoid, prickly. General. Naturalized from the tropics.

Lycium L.

Shrubs or woody vines, with small leaves and with smaller ones in fascicles in the axils. Flowers white, greenish or purple, solitary or in clusters; calyx campanulate, 3 to 5-lobed; corolla tube short or slender, the limb 5-lobed (rarely 4-lobed), the lobes obtuse; stamens 5, (rarely 4) filaments filiform.

1. **Lycium halmifolium** Mill. Matrimony-vine. Glabrous, with thorns or unarmed. Leaves lanceolate, oblong, or spatulate, with short petioles; stem slender, climbing or trailing; thorns when present slender; calyx lobes ovate; corolla purplish, changing to greenish; stamens slightly exerted; berry oval, orange-red. Rather general. From Europe.

Physalodes Boehm.

Annual, erect, glabrous herbs. Leaves alternate, petioled, sinuate-dentate or lobed; flowers large, solitary, light-blue, nodding; calyx-segments ovate, connivent, cordate or sagitate at the base, netted-veined; corolla broadly campanulate, slightly 5-lobed; stamens 5, included, united with the base of the corolla.

1. **Physalodes physalodes** (L.) Britt. Apple-of-Peru. Plant 18 to 45 inches high with angled stem. Leaves ovate or oblong, acuminate but blunt, narrowing into a long petiole; limb of corolla almost entire; segments of the fruiting-calyx terminating in cusps, loosely surrounding the berry. Hamilton, Clinton, Clark, Franklin, Licking, Gallia, Montgomery, Champaign. From Peru.

Physalis L.

Herbs with entire or sinuately toothed leaves. Calyx campanulate, 5-toothed, when in fruit much enlarged and 5-angled or 10-ribbed and reticulate, wholly enclosing the pulpy berry; corolla often with a brownish or purplish centre, open-campanulate, or rarely campanulate-rotate, plicate; stamens united with the base of the corolla.

1. Stems glabrous or only slightly pubescent, peduncles usually longer than the flowers, leaves usually acute or acuminate at the base. 4.
1. Stems very pubescent or woolly; peduncles usually shorter than the flowers; leaves usually shorter than the flowers; leaves usually cordate or truncate at the base. 2.
2. Leaves with long hairs, plants perennial; fruiting-calyx pyramidal, 5-angled and with long points. *P. heterophylla*
2. Leaves with short pubescence, plants annual; fruiting-calyx rather small, points very short. 3.
3. Plant green, leaves ovate, usually only slightly cordate at the base, nearly entire or dentate. *P. pruinosa*.
3. Plant somewhat hoary; leaves cordate at the base, strongly oblique, coarsely sinuate. *P. pubescens*.
4. Leaves ovate-lanceolate; fruiting-calyx green. 5.
4. Leaves broadly ovate, acute; fruiting-calyx red. *P. alkekengi*.
5. Stem usually not 2-forked; leaves not decidedly dentate toward the tip; fruiting-calyx ovoid. 6.
5. Stem noticeably 2-forked; main-stem erect; fruiting-calyx pyramidal, 5-angled, deeply sunken at the base; leaves usually dentate at the outer end. *P. virginiana*.
6. Peduncles shorter than the flower; annual. *P. ixocarpa*.
6. Peduncles longer than the flower; perennial by rootstocks or roots. *P. lanceolata*.

1. **Physalis lanceolata** Mx. Prairie Ground-cherry. Plant with slender, creeping root-stock. Young stems erect, later spreading or diffuse, slightly angled, somewhat hirsute with flat hairs; leaves mostly entire, sometimes slightly lobed, sparingly covered with short hairs; calyx lobes triangular-lanceolate, when in fruit round-ovoid, not sunken at the base, indistinctly 10-angled; corolla dullish yellow with a brownish centre. General.

2. **Physalis ixocarpa** Brot. Mexican Ground-cherry. When young erect, later widely spreading; stem angled, glabrous or the younger parts slightly hairy; leaves cordate to ovate with a cuneate base, sinuately dentate or entire; calyx slightly hairy; corolla bright yellow with purple throat; fruiting-calyx round ovoid, obscurely 10-angled, often purple veined; berry purple, filling the husk. Franklin county. Native of Mexico.

3. **Physalis virginiana** Mill. Virginia Ground-cherry. Perennial; about 14 inches high; stems slightly angled, strigose-hairy with flat hairs, or glabrous; dichotomously branched; leaves ovate-lanceolate, usually sinuately dentate; peduncles in fruit curved but scarcely reflexed; calyx lobes triangular or broadly lanceolate, nearly equalling the tube; flowers sulphur-yellow with purplish spots. Cuyahoga county.

4. **Physalis alkekengi** L. Chinese Lantern (Ground-cherry). Perennial. Leaves thin, broadly ovate, entire or angled; fruiting calyx much enlarged, veined, scarlet or crimson. Persistent after cultivation. Franklin, Lake.

5. **Physalis heterophylla** Nees. Clammy Ground-cherry. Perennial by a creeping rootstock, viscid and glandular, 12 to 18 inches high, with long, spreading, jointed, flat hairs; leaves acute, very rarely with an acumination, thick, sinuately toothed or sometimes subentire; calyx long-villous with triangular lobes usually not as long as the tube; corolla greenish-yellow with a brownish or purplish centre. General and abundant.

6. **Physalis pubescens** L. Low Hairy Ground-cherry. Plant pubescent, with spreading stems slightly swollen at the nodes. Leaves ovate, acute, or acuminate, slightly cordate, upward repand-denticulate or entire, pubescent, sometimes becoming nearly glabrous except along the veins; corolla yellow with a dark centre; calyx lobes narrow, in fruit membranous, pyramidal, ovoid-acuminate, retuse at the base. Shelby, Morgan.

7. **Physalis pruinosa** L. Tall Hairy Ground-cherry. Stout, generally erect, quite hairy. Stem finely villous or somewhat viscid; leaves finely pubescent, ovate, cordate, and deeply sinuately toothed; calyx villous or viscid, its lobes as long as the tube, narrow but not subulate-tipped; fruiting calyx reticulate, ovoid, cordate; berry yellow or green. Franklin county.

Solanum L.

Herbs or shrubs, often stellate-pubescent, sometimes climbing. Flowers cymose umbelliform, paniculate, or racemose; calyx campanulate or rotate, usually 5-cleft; corolla rotate, the limb plaited, 5-angled or 5-lobed, the tube very short; stamens united with the corolla, filaments short.

1. Leaves compound or divided. 2.
1. Leaves entire, toothed, or merely lobed. 4.
2. Plants not prickly. 3.
2. Plant and enlarged fruiting-calyx very prickly; one stamen enlarged and beaked. *S. rostratum*.
3. Herbs with tubers; stems prominently wing-angled. *S. tuberosum*.
3. Climbing vines, more or less woody; stems not winged, or only slightly angled. *S. dulcamara*.
4. Plants prickly or if only slightly so, then stellate-pubescent, or silvery-canescens all over. 5.
4. Plants glabrous or somewhat pubescent, not prickly or silvery-canescens; ripe berries black. *S. nigrum*.
5. Leaves repand-dentate or entire; densely silvery-canescens. *S. eleagnifolium*.
5. Leaves lobed and angled; hirsute. *S. carolinense*.

1. **Solanum eleagnifolium** Cav. Silverleaf Nightshade. Perennial, silvery-canescens all over. Stem sometimes with sharp prickles; leaves lanceolate, oblong or linear, petioled, mostly obtuse, repand-dentate or entire; flowers cymose; peduncles short;

calyx-lobes lanceolate or linear-lanceolate, acute. Lucas county. (a waif.)

2. **Solanum carolinense** L. Horse-nettle. Stellate-pubescent with 4 to 8 rayed hairs, erect, branched, prickly. Leaves oblong or ovate, repand, lobed or pinnatifid; flowers cymose-racemose with pedicels recurved in fruit; petals ovate-lanceolate, acute; calyx-lobes lanceolate, acuminate, about half the length of the corolla, persistent at the base of the berry; berries orange-yellow, glabrous. General.

3. **Solanum tuberosum** L. Potato. Plant erect, finely pubescent. Leaves pinnate, made up of several ovate leaflets and some minute ones inter-mixed; flowers blue or white, arranged in cymes; sepals about half the length of the petals; berries round, green. Franklin, Ottawa, Erie, Tuskarawas, Hocking, Monroe.

4. **Solanum dulcamara** L. Bitter-sweet. Perennial; stem climbing, somewhat woody below. Leaves ovate or hastate; petioled, acute or acuminate, entire, 3-lobed, or 3-divided with the terminal segment the largest; flowers blue, purple or white in compound lateral cymes; corolla 5-lobed, petals triangular-lanceolate, sepals short, oblong, obtuse, persistent at the base of the berry; berry oval or globose, red. General in northern Ohio as far south as Clark, Licking and Jefferson counties; also in Meigs county.

5. **Solanum nigrum** L. Black Nightshade. Annual, glabrous or slightly pubescent, about 15 inches high. Leaves ovate, petioled, more or less inequilateral, acute, acuminate at the apex; flowers broad, 3 to 10 on an umbel; calyx-lobes much shorter than the corolla, persistent at the base of the berry; berries glabrous, globose. General and abundant.

6. **Solanum rostratum** Dun. Buffalo-bur. Densely pubescent with 5 to 8 rayed hairs and covered with yellow subulate prickles. Leaves ovate or oval in outline, irregularly pinnately 5 to 7 lobed or 1 to 2 pinnatifid; flowers in lateral racemes; pedicels erect both in flower and fruit; calyx densely prickly, entirely covering the berry. Franklin, Marion, Ottawa, Cuyahoga, Summit, Lake. From the west.

Lycopersicon Mill.

Annual, or rarely perennial, coarse herbs with 1 to 2 pinnately divided leaves and flowers in lateral irregular racemose cymes opposite the leaves. Corolla rotate, the tube short, the limb 5-cleft rarely 6-cleft, plicate; calyx 5-parted rarely 6-parted.

1. **Lycopersicon lycopersicon** (L.) Karst. Tomato. Viscid-pubescent, much branched, one to several feet high. Leaves petioled, ovate or ovate-lanceolate, mostly acute, dentate, lobed or again divided with several or numerous small leaflets, sepals about equalling the petals. Rather general as an escape.